

May 6 to May 12, 2012 (Week 19)

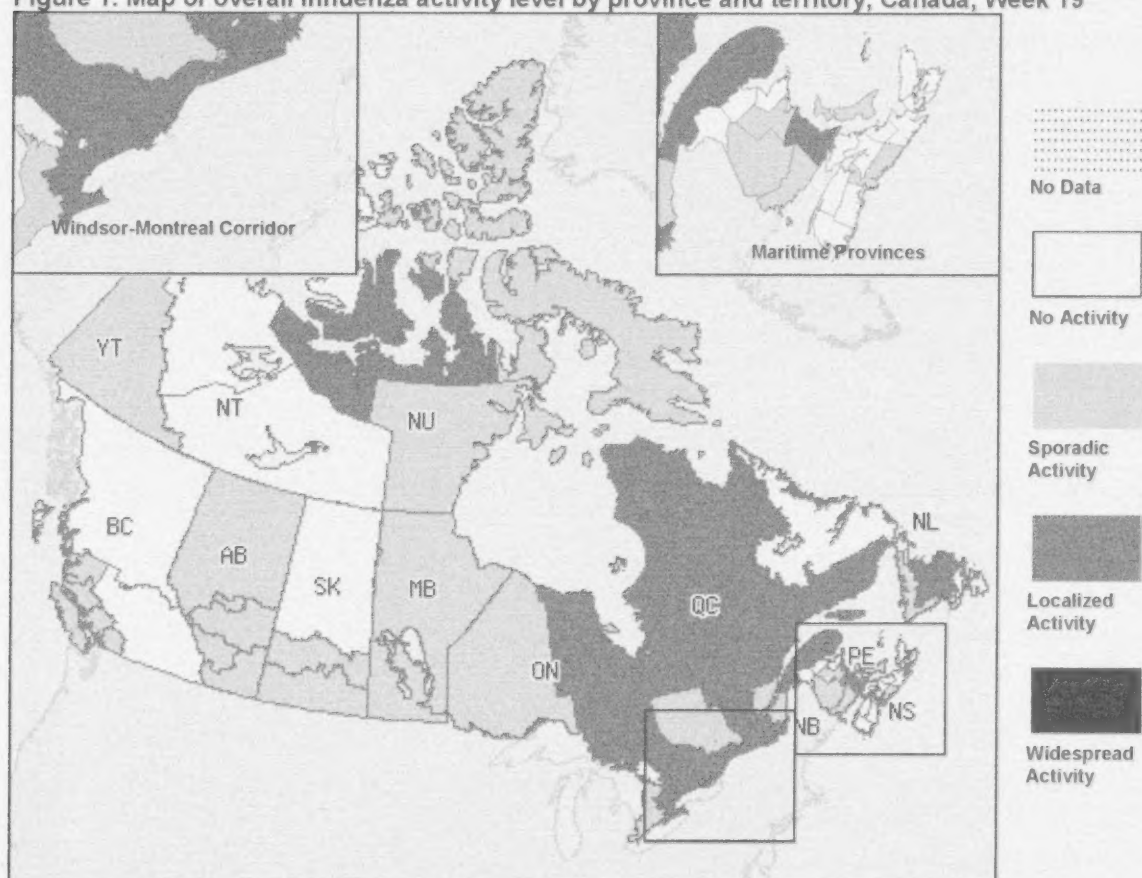
Overall Influenza Summary

- Overall, influenza activity in Canada continues to decline; most indicators of influenza activity have declined compared to the previous week. Reports of localized influenza activity were still reported in regions in Ontario, Quebec, Newfoundland, New Brunswick and Nunavut.
- Nine outbreaks of influenza or ILI were reported this week (6 in LTCFs, 1 in a school and 2 others).
- In week 19, 304 laboratory detections of influenza were reported (9.9% - A(H3); 4.6% - A(H1N1)pdm09; 22.4% - unsubtype and 63.2% influenza B).
- Seventy-seven influenza-associated hospitalizations were reported this week (13 paediatric through IMPACT surveillance and 64 adult through aggregate surveillance)
- The ILI consultation rate declined considerably compared to the previous week and is below expected levels for this time of year.

Influenza Activity (geographic spread) and Outbreaks

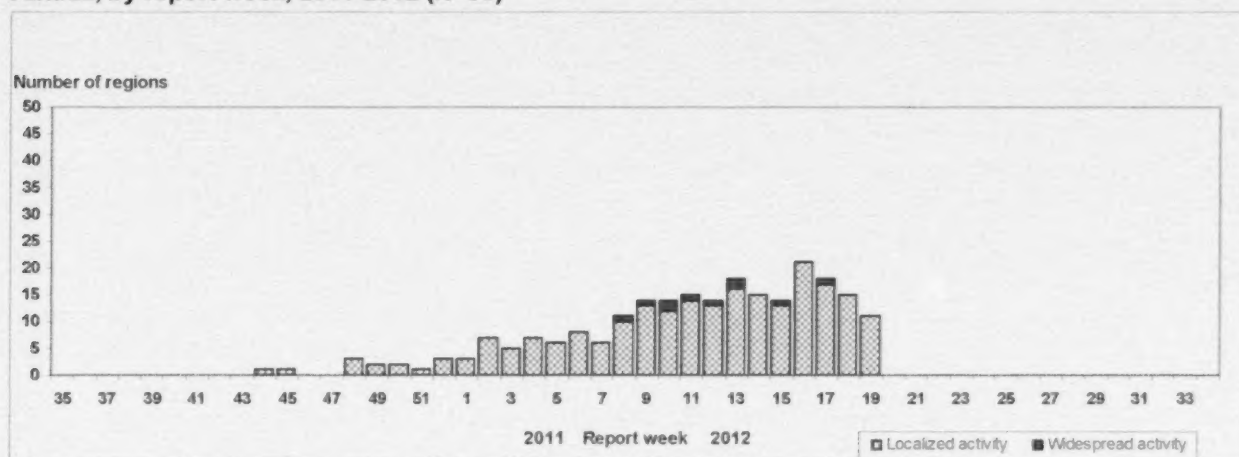
In week 19, 11 surveillance regions (within ON, QC NB, NL & NU) reported localized activity and 26 regions (within all provinces and territories except in NT) reported sporadic influenza activity (see Figure 1). Nine outbreaks of influenza or ILI were reported this week: 6 in long-term care facilities (3 in ON & 3 in QC), 1 in a school (in NB) and 2 others (1 in NL & 1 in NU) (Figure 3).

Figure 1. Map of overall Influenza activity level by province and territory, Canada, Week 19



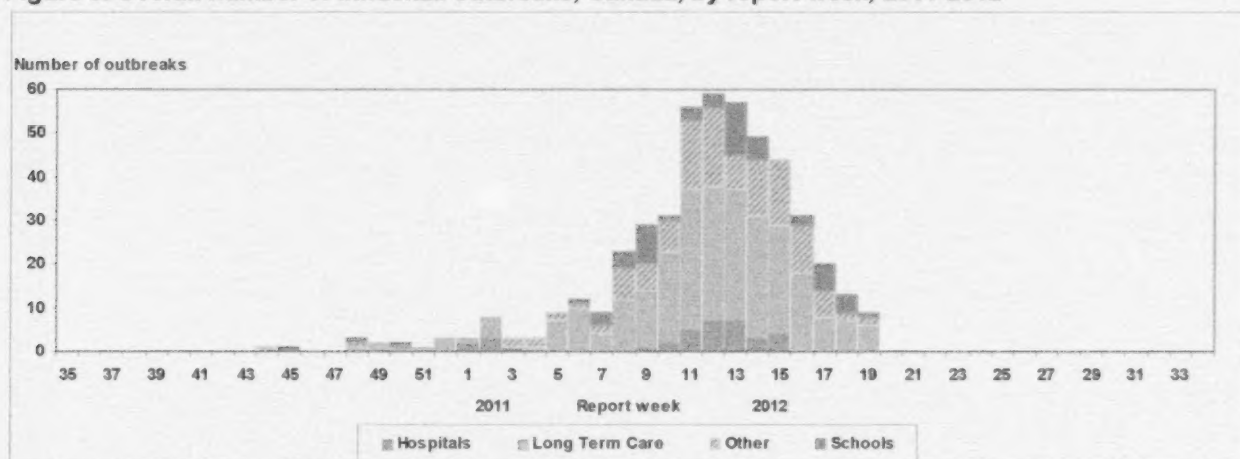
Note: Influenza activity levels, as represented on this map, are assigned and reported by Provincial and Territorial Ministries of Health, based on laboratory confirmations, sentinel ILI rates (see graphs and tables) and reported outbreaks. Please refer to detailed definitions on the last page. For areas where no data is reported, late reports from these provinces and territories will appear on the FluWatch website.

Figure 2. Number of influenza surveillance regions† reporting widespread or localized influenza activity, Canada, by report week, 2011-2012 (N=56)



† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.

Figure 3. Overall number of influenza outbreaks, Canada, by report week, 2011-2012



Influenza and Other Respiratory Virus Detections

The proportion of positive influenza tests continued to decline this week and was 9.7% (304/3,124) in week 19 (Figure 4 & 5). The proportion of positive detections for both influenza A (3.6%) and influenza B (6.1%) declined compared to the previous week.

Cumulative to date of influenza virus detections by type/subtype is as follows: 47.0% influenza A (40.5% - A(H3); 18.9% - A(H1N1)pdm09; 40.6% - untyped) and 53.0% influenza B (Table 1).

Detailed information on age and type/subtype were received on 9,583 cases to date this season (Table 2). The proportions of cases by age group are as follows: 20.9% were < 5 years; 17.8% were between 5-19 years; 22.0% were between 20-44 years; 15.4% were between 45-64 years of age; 23.6% were ≥ 65 years; and 0.2% with age unknown. The largest proportion of influenza A cases were between 20-44 years of age (26%) and those ≥ 65 years of age (24%). The largest proportion of influenza B cases were in those under 20 years of age (46%) and those ≥ 65 years of age (23%).

The percentage positive for rhinovirus detections was similar to the previous week (11.3% in week 19) and has surpassed the percentage positive for influenza viruses. The percentage positive for the other respiratory viruses remained low and were similar to the previous week: RSV-4.2%; parainfluenza-2.7%; adenovirus-2.9%; hMPV-3.0%; and coronavirus-1.1% (Figure 5). For more details, see the weekly [Respiratory Virus Detections in Canada Report](#).

Table 1. Weekly & Cumulative numbers of positive influenza specimens by Provincial Laboratories, Canada, 2011-2012

Reporting provinces	May 6 to May 12, 2012						Cumulative (August 28, 2011 to May 12, 2012)					
	Influenza A					B	Influenza A					B
	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total
BC	8	0	7	0	1	7	565	0	455	93	17	112
AB	15	0	2	8	5	19	1312	0	1010	246	56	222
SK	9	0	0	1	8	5	509	0	319	48	142	77
MB	1	0	1	0	0	9	71	0	11	6	54	233
ON	9	0	3	2	4	76	927	0	243	489	195	2649
QC	53	0	8	2	43	61	1816	0	69	96	1651	2139
NB	7	0	3	1	3	9	97	0	31	33	33	322
NS	1	0	1	0	0	0	16	0	11	1	4	93
PE	0	0	0	0	0	6	3	0	2	1	0	50
NL	9	0	5	0	4	0	88	0	36	10	42	209
Canada	112	0	30	14	68	192	5404	0	2187	1023	2194	6106

*Unsubtyped: The specimen was typed as influenza A, but no test for subtyping was performed. Specimens from NT, YT, and NU are sent to reference laboratories in other provinces. Note: Weekly data is based on week of positive lab detection. Cumulative data includes updates to previous weeks; due to reporting delays, the sum of weekly report totals do not add up to cumulative totals.

Table 2. Weekly & Cumulative numbers of positive influenza specimens by age groups reported through case-based laboratory reporting, Canada, 2011-2012*

Age groups	Weekly (May 6 to May 12, 2012)					Cumulative (Aug. 28, 2011 to May 12, 2012)				
	Influenza A				B	Influenza A				B
	A Total	Pandemic H1N1	A/H3N2	A unsubtyped	Total	A Total	Pandemic H1N1	A/H3N2	A unsubtyped	Total
<5	12	0	2	10	16	971	220	341	410	1035
5-19	8	1	4	3	42	547	78	276	193	1155
20-44	16	1	1	14	29	1225	276	444	505	884
45-64	21	1	4	16	28	866	177	292	397	613
65+	35	2	3	30	65	1172	70	708	394	1094
Unknown	0	0	0	0		18	6	11	1	3
Total	92	5	14	73	180	4799	827	2072	1900	4784

*Please note that this table reflects the number of specimens for which demographic information was reported. These represent a subset of all positive influenza cases reported. Delays in the reporting of data may cause data to change retrospectively.

Figure 4. Influenza tests reported and percentage of tests positive, Canada, by report week, 2011-2012

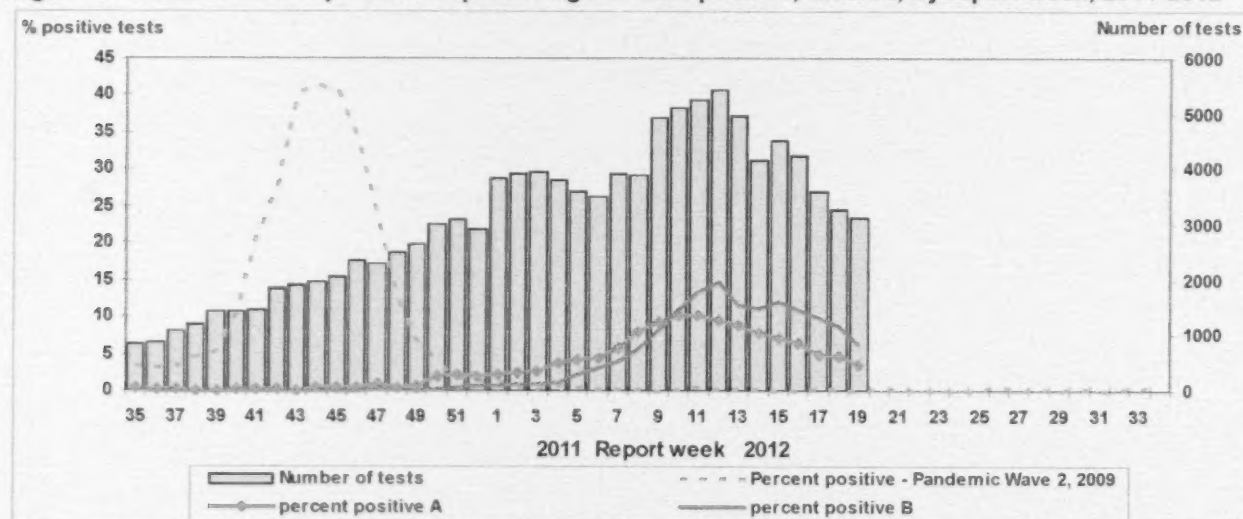
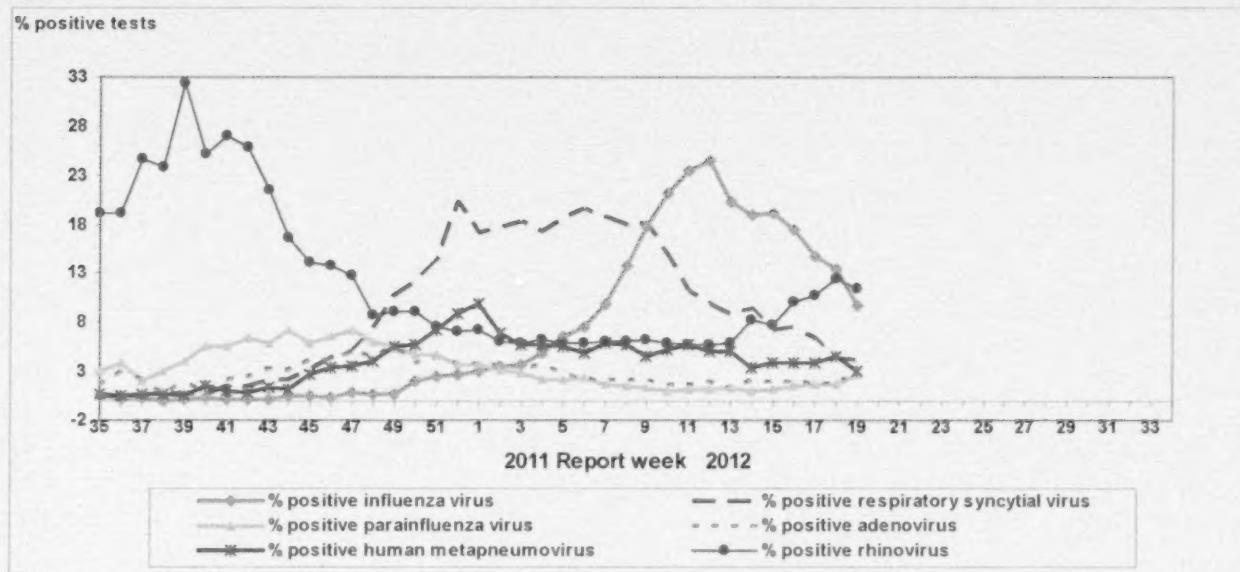


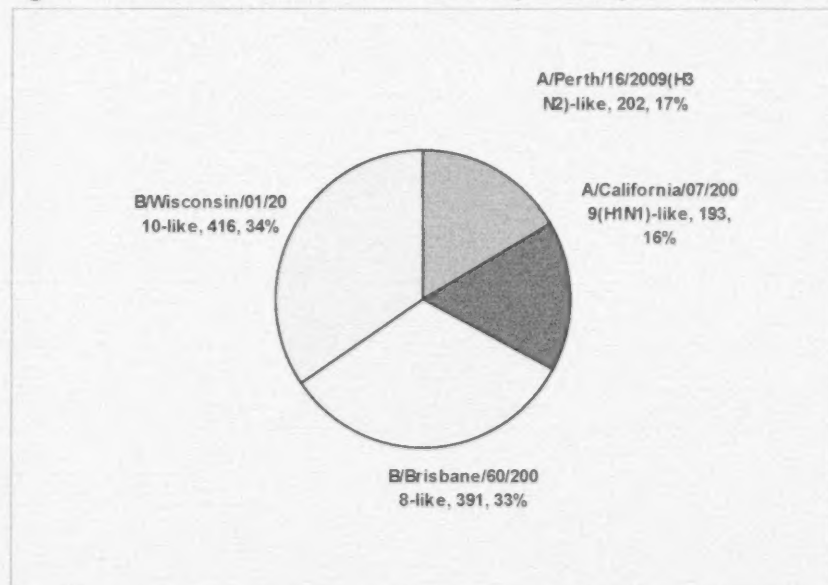
Figure 5. Percent positive influenza tests, compared to other respiratory viruses, Canada, by reporting week, 2011-2012



Influenza Strain Characterizations

Since the start of the season, the National Microbiology Laboratory (NML) has antigenically characterized 1,202 influenza viruses (202 A/H3N2, 193 A/H1N1 and 807 B). Of the 202 A/H3N2 viruses (from BC, AB, SK, MB, ON, QC, NS & NT), 90.1% (182) were antigenically similar to A/Perth/16/2009 while 9.9% (20) viruses showed reduced titers with antiserum produced against A/Perth/16/2009. Of the 193 A/H1N1 viruses characterized (from BC, AB, SK, MB, ON, QC & NB), 97.4% (188) were antigenically similar to A/California/07/2009 and 2.6% (5) viruses tested showed reduced titer with antiserum produced against A/California/07/2009. Of the 807 influenza B viruses characterized, 48.5% (391) (from BC, AB, SK, MB, ON, QC, NB, NS & NL) were antigenically similar to the vaccine strain B/Brisbane/60/2008 (Victoria lineage); however 1 virus out of the 391 tested showed reduced titer with antiserum produced against B/Brisbane/60/2008. The remaining 51.5% (416) of the influenza B viruses (from BC, AB, SK, MB, ON, QC, NB, NS, NT & NU) are antigenically related to the reference virus B/Wisconsin/01/2010-like, which belongs to the Yamagata lineage. (Figure 6)

Figure 6. Influenza strain characterizations, Canada, 2011-2012, N = 1,202



Note: The recommended components for the 2011-2012 Northern Hemisphere influenza vaccine include: A/Perth/16/2009 (H3N2), A/California/7/2009 (H1N1) and B/Brisbane/60/2008.

Antiviral Resistance

Since the beginning of the season, NML has tested 1,149 influenza viruses for resistance to oseltamivir (by phenotypic assay and/or sequencing) and 1,150 for zanamivir (by phenotypic assay) and it was found that all viruses tested were susceptible to oseltamivir and zanamivir. A total of 648 influenza A viruses (348 H3N2 and 300 H1N1) were tested for amantadine resistance; all but 1 influenza A(H3N2) virus tested were resistant. (Table 3)

Table 3. Antiviral resistance by influenza virus type and subtype, Canada, 2011-2012

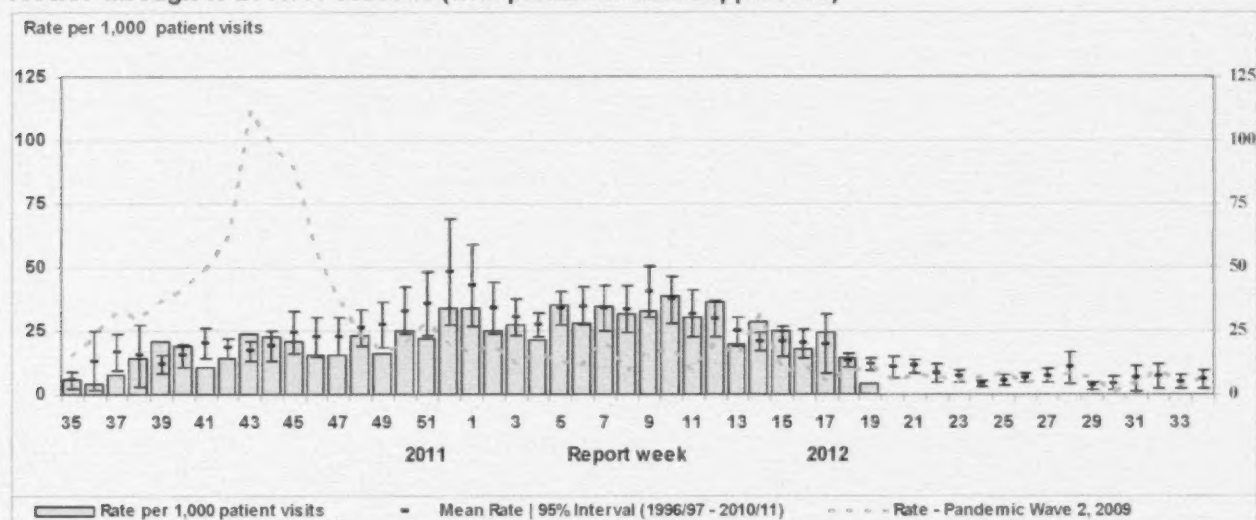
Virus type and subtype	Oseltamivir		Zanamivir		Amantadine	
	# tested	# resistant (%)	# tested	# resistant (%)	# tested	# resistant (%)
A (H3N2)	196	0	196	0	348	347 (99.7%)
A (H1N1)	215	0	215	0	300	300 (100%)
B	738	0	739	0	NA*	NA*
TOTAL	1,149	0	1,150	0	648	647 (99.8%)

* NA – not applicable

Influenza-like Illness (ILI) Consultation Rate

The national ILI consultation rate in week 19 (4.2 ILI consultations per 1,000 patient visits) declined considerably compared to the previous week and is below the expected levels for this time of year (Figure 7). The steep decline in ILI consultations is partly due to the lower ILI observed for this time of year and may also be due to the low sentinel response rates observed for week 19 (i.e. some sentinel physicians have stopped reporting for the 2011-2012 influenza season). The highest consultation rates this week were observed in children under 5 years of age (9.7/1,000 visits) and those between 5 to 19 years old (4.6/1,000 visits).

Figure 7. Influenza-like illness (ILI) consultation rates, Canada, by report week, 2011-2012 compared to 1996/97 through to 2010/11 seasons (with pandemic data suppressed)



Note: No data available for mean rate in previous years for weeks 19 to 39 (1996-1997 through 2002-2003 seasons). Delays in the reporting of data may cause data to change retrospectively.

Severe Respiratory Illness Surveillance

Paediatric Influenza Hospitalizations and Deaths (IMPACT)

In week 19, 13 new laboratory-confirmed influenza-associated paediatric (16 years of age and under) hospitalizations were reported through the Immunization Monitoring Program Active (IMPACT) network. Four hospitalizations were due to influenza A (unsubtyped) (in BC, ON & QC) and 9 were due to influenza B (in BC, AB, ON & QC).

To date this season, 559 influenza-associated paediatric hospitalizations have been reported through IMPACT (from BC, AB, SK, MB, ON, QC, NS & NL); 42.9% (240) were due to influenza A and 57.1% (319) were due to influenza B. The proportion of cases by age group is as follows: 14.7% among infants <6 months of age; 20.6% among children 6-23 months of age; 30.6% were between 2-4 years; 24.3% were between 5-9 years; and 9.8% were between 10-16 years. To date this season, 5 influenza-associated paediatric deaths have been reported through the IMPACT network; all associated with influenza B infection.

Note: The number of hospitalizations reported through IMPACT represents a subset of all influenza-associated paediatric hospitalizations in Canada; therefore, the number of hospitalizations included in this report may differ from those reported by other Provincial and Territorial Health Authorities.

Influenza Hospitalizations and Deaths (Aggregate Surveillance System)

In week 19, 90 new laboratory-confirmed influenza-associated hospitalizations were reported of which 28.9% (26) were in those < 20 years of age and 71.1% (64) in those ≥ 20 years of age; 33.3% were due to influenza A and 66.7% due to influenza B. The hospitalizations were reported from AB (7), MB (5), ON (66), and NL (12). Of the 90 hospitalizations, 3 required admission to ICU (NL) and were associated with an influenza A untyped infection. In week 19, 4 influenza-associated deaths were reported (ON); all were associated with influenza B infection and all were ≥ 65 years of age.

To date this season, 1,674 influenza-associated hospitalizations have been reported from 7 provinces (AB, SK, MB, ON, NS, PE & NL) and 2 territories (YT & NT). The largest proportion of cases was observed in those ≥ 65 years of age (33.7%). Influenza B (56.1%) continues to be the predominant influenza type among hospitalized cases compared to influenza A (43.9%); of the influenza A hospitalizations where subtype was available, influenza A(H3N2) predominated (60.5%). There have been 70 hospitalizations requiring ICU admission reported (from AB, SK, MB, NS & NL) of which 30.0% were in those < 20 years of age and 70.0% were in those ≥ 20 years of age. To date this season, 88 influenza-associated deaths have been reported (from AB, SK, MB, ON & NS) of which 1.1% were of unknown age, 6.8% were among those < 20 years of age and 92.0% in those ≥ 20 years of age. Of the adult deaths, 80.2% were in those ≥ 65 years of age.

Note: Some of the hospitalizations and deaths reported in those ≤ 16 years of age may also have been reported in the IMPACT summary above if the hospitalization or death occurred in one of the 12 IMPACT hospitals. The reason for hospitalization or cause of death does not have to be attributable to influenza in order to be reported. Influenza-associated hospitalizations are not reported to PHAC by the following Provinces: BC, & QC. Only hospitalizations that require intensive medical care are reported by SK. ICU admissions are not reported in ON.

International Influenza Updates

WHO: No new updates have been reported by the WHO since May 11, 2012. [World Health Organization influenza update](#)

United States: During week 18, influenza activity declined nationally and in most regions of the United States, however remained elevated in some areas. In week 18, the proportion of tests positive for influenza viruses declined compared to the previous week (13.7%); the majority (64.6%) were positive for influenza A viruses, however the proportion positive for influenza B virus detections increased. Since October 1, 2011, the CDC characterized 1,438 influenza viruses: 369 A/H1N1, 817 A/H3N2 and 252 B. Of the 369 A/H1N1 viruses characterized, 98.4% (363) were A/California/7/2009(H1N1)-like and 1.6% (6) showed reduced titers with antiserum produced against A/California/7/2009. Of the 817 influenza A/H3N2 viruses that were characterized, 79.3% (648) were A/Perth/16/2009-like and 20.7% (169) showed reduced titers with antiserum produced against A/Perth/16/2009. Of the 252 influenza B viruses that were characterized, 46.4% (117) were B/Brisbane/60/2008-like (B/Victoria lineage) and 53.6% (135) belonged to the B/Yamagata lineage. The proportion of outpatient visits for ILI was 1.4%, which is below the national baseline. Widespread influenza activity was reported in 2 states, 8 states reported regional influenza activity, 12 states reported localized influenza activity, while the rest reported either sporadic or no activity. Two influenza A-associated paediatric deaths were reported to CDC in week 18 but occurred in weeks 17 & 18; one was associated with influenza A (unsubtyped) and the other with influenza B virus. To date this season, 22 influenza associated-pediatric deaths have been reported. [Centers for Disease Control and Prevention seasonal influenza report](#)

Europe: Influenza activity in Europe is approaching out-of-season levels. In week 19, clinical consultation rates for influenza-like illness (ILI) and acute respiratory infection (ARI) were approaching out-of-season levels in most of the countries in the Region. The numbers of specimens tested, as well as the percentage of positive influenza cases, continue to decline; the positive cases for week 19 showed a higher prevalence of influenza B viruses (67%) compared to influenza A (33%). Since week 40, 1,918 influenza viruses have been characterized antigenically: 1.5% were A/California/7/2009(H1N1)-like; 76.4% were A/Perth/16/2009(H1N1)-like; 0.1% were A/Brisbane/10/2007 (H3N2)-like; 2.6% were B/Florida/4/2006-like (B/Yamagata/16/88 lineage), 2.8% were B/Bangladesh/3333/2007-like (B/Yamagata/16/88 lineage) and 16.6% were B/Brisbane/60/2008-like (B/Victoria/2/87 lineage). [EuroFlu weekly electronic bulletin](#)

Human Avian Influenza Updates

No new human avian influenza A/H5N1 cases were reported by the WHO since May 2, 2012. [*WHO Avian influenza situation updates*](#)

FluWatch reports include data and information from the following sources: laboratory reports of positive influenza tests in Canada (National Microbiology Laboratory), sentinel physician reporting of influenza-like illness (ILI), provincial/territorial assessment of influenza activity based on various indicators, including laboratory surveillance, ILI reporting, and outbreaks, influenza-associated paediatric and adult hospitalizations, antiviral sales in Canada, and WHO and other international reports of influenza activity.

Abbreviations: Newfoundland/Labrador (NL), Prince Edward Island (PE), New Brunswick (NB), Nova Scotia (NS), Quebec (QC), Ontario (ON), Manitoba (MB), Saskatchewan (SK), Alberta (AB), British Columbia (BC), Yukon (YT), Northwest Territories (NT), Nunavut (NU).

ILI definition for the 2011-2012 season

ILI in the general population: Acute onset of respiratory illness with fever and cough and with one or more of the following - sore throat, arthralgia, myalgia, or prostration which is likely due to influenza. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

Definitions of ILI/Influenza outbreaks for the 2011-2012 season

Schools: Greater than 10% absenteeism (or absenteeism that is higher (e.g. >5-10%) than expected level as determined by school or public health authority) which is likely due to ILI. Note: it is recommended that ILI school outbreaks be laboratory confirmed at the beginning of influenza season as it may be the first indication of community transmission in an area.

Hospitals and residential institutions: two or more cases of ILI within a seven-day period, including at least one laboratory confirmed case. Institutional outbreaks should be reported within 24 hours of identification. Residential institutions include but not limited to long-term care facilities (LTCF) and prisons.

Other settings: two or more cases of ILI within a seven-day period, including at least one laboratory confirmed case; i.e. workplace, closed communities.

Influenza Activity Levels Definition for the 2011-2012 season

Influenza Regional Activity levels are defined as:

- 1 = No activity: no laboratory-confirmed influenza detections in the reporting week, however, sporadically occurring ILI may be reported
- 2 = Sporadic: sporadically occurring ILI and lab confirmed influenza detection(s) with **no outbreaks** detected within the influenza surveillance region†
- 3 = Localized: (1) evidence of increased ILI* and
(2) lab confirmed influenza detection(s) together with
(3) **outbreaks** in schools, hospitals, residential institutions and/or other types of facilities occurring in **less than 50% of the influenza surveillance region†**
- 4 = Widespread: (1) evidence of increased ILI* and
(2) lab confirmed influenza detection(s) together with
(3) **outbreaks** in schools, hospitals, residential institutions and/or other types of facilities occurring in **greater than or equal to 50% of the influenza surveillance region†**

Note: ILI data may be reported through sentinel physicians, emergency room visits or health line telephone calls.

* More than just sporadic as determined by the provincial/territorial epidemiologist.

† Influenza surveillance regions within the province or territory as defined by the provincial/territorial epidemiologist.

We would like to thank all the Fluwatch surveillance partners who are participating in this year's influenza surveillance program.

This report is available on the Public Health Agency website at the following address: <http://www.phac-aspc.gc.ca/fluwatch/index.html>. Ce rapport est disponible dans les deux langues officielles. Pour en recevoir un exemplaire dans l'autre langue chaque semaine, veuillez communiquer avec Estelle Arseneault, Division de l'immunisation et des infections respiratoires au (613) 998-8862.